

# EMC TEST REPORT



Report No.: 18070046-FCC-E

Supersede Report No: N/A

Applicant	BLU Products, Inc	
Product Name	Mobile Phone	
Model No.	VIVO ONE PLUS	
Serial No.	N/A	
Test Standard	FCC Part 15 Subpart B Class B:2016, ANSI C63.4: 2014	
Test Date	January 13 to January 28, 2018	
Issue Date	January 29, 2018	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification <input checked="" type="checkbox"/>		
Equipment did not comply with the specification <input type="checkbox"/>		
<i>Evans He</i>	<i>David Huang</i>	
Evans He Test Engineer	David Huang Checked By	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:

**SIEMIC (SHENZHEN-CHINA) LABORATORIES**

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

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## Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

### Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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## 1. Report Revision History

Report No.	Report Version	Description	Issue Date
18070046-FCC-E	NONE	Original	January 29, 2018

## 2. Customer information

Applicant Name	BLU Products,Inc
Applicant Add	10814 NW 33rd St # 100 Doral, FL 33172
Manufacturer	BLU Products,Inc
Manufacturer Add	10814 NW 33rd St # 100 Doral, FL 33172

## 3. Test site information

Test Lab A:

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

Test Lab B:

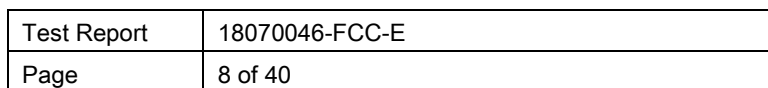
Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMG(ver.lcp-03A1)

Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

## 4. Equipment under Test (EUT) Information

Description of EUT:	Mobile Phone
Main Model:	VIVO ONE PLUS
Serial Model:	N/A
Antenna Gain:	GSM850: -2.8dBi PCS1900: -2.3dBi UMTS-FDD Band V: -2.5dBi UMTS-FDD Band IV: -2.5dBi UMTS-FDD Band II: -2.5dBi LTE Band II: -2.5dBi LTE Band IV: -2.5dBi LTE Band VII: -3.0dBi LTE Band XII: -2.8dBi LTE Band XVII: -2.8dBi Bluetooth/BLE: -2.7dBi WIFI: -2.7dBi GPS: -2.5dBi
Antenna Type:	PIFA Antenna
Input Power:	Adapter : Model: TPA-46050200UU Input: AC100-240V~50/60Hz,0.3A Output: DC 5V, 2A Battery: Model: C916241400P Spec: 3.85V, 4000mAh,15.4Wh Voltage: 4.4V
Equipment Category :	JBP
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK UMTS-FDD: QPSK LTE Band: QPSK, 16QAM







## 5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.107; ANSI C63.4: 2014	AC Power Line Conducted Emissions	Compliance
§15.109; ANSI C63.4: 2014	Radiated Emissions	Compliance

### Measurement Uncertainty


Parameter	Uncertainty
AC Power Line Conducted Emissions (150kHz~30MHz)	±3.11dB
Radiated Emission(30MHz~1GHz)	±5.12dB
Radiated Emission(1GHz~6GHz)	±5.34dB

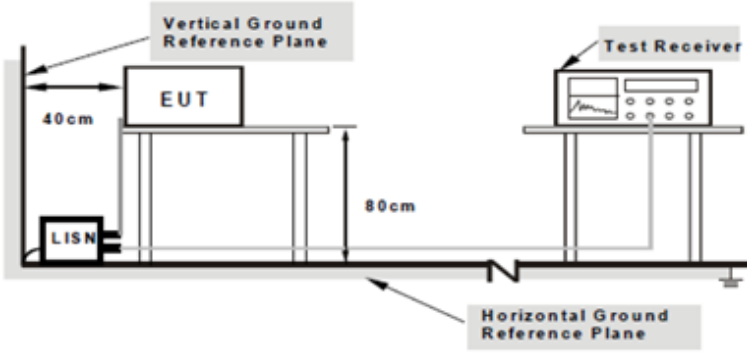
## 6. Measurements, Examination And Derived Results

### 6.1 AC Power Line Conducted Emissions

Temperature	25 °C
Relative Humidity	58%
Atmospheric Pressure	1016mbar
Test date :	January 16, 2018
Tested By :	Evans He

#### Requirement(s):

Spec	Item	Requirement	Applicable														
47CFR§15.107	a)	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.															
		<table><tr><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBµV)</th></tr><tr><th>QP</th><th>Average</th></tr><tr><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr><tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr><tr><td>5 ~ 30</td><td>60</td><td>50</td></tr></table>		Frequency ranges (MHz)	Limit (dBµV)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50
		Frequency ranges (MHz)			Limit (dBµV)												
				QP	Average												
		0.15 ~ 0.5		66 – 56	56 – 46												
		0.5 ~ 5		56	46												
5 ~ 30	60	50															

Test Setup	 <p>Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</p>
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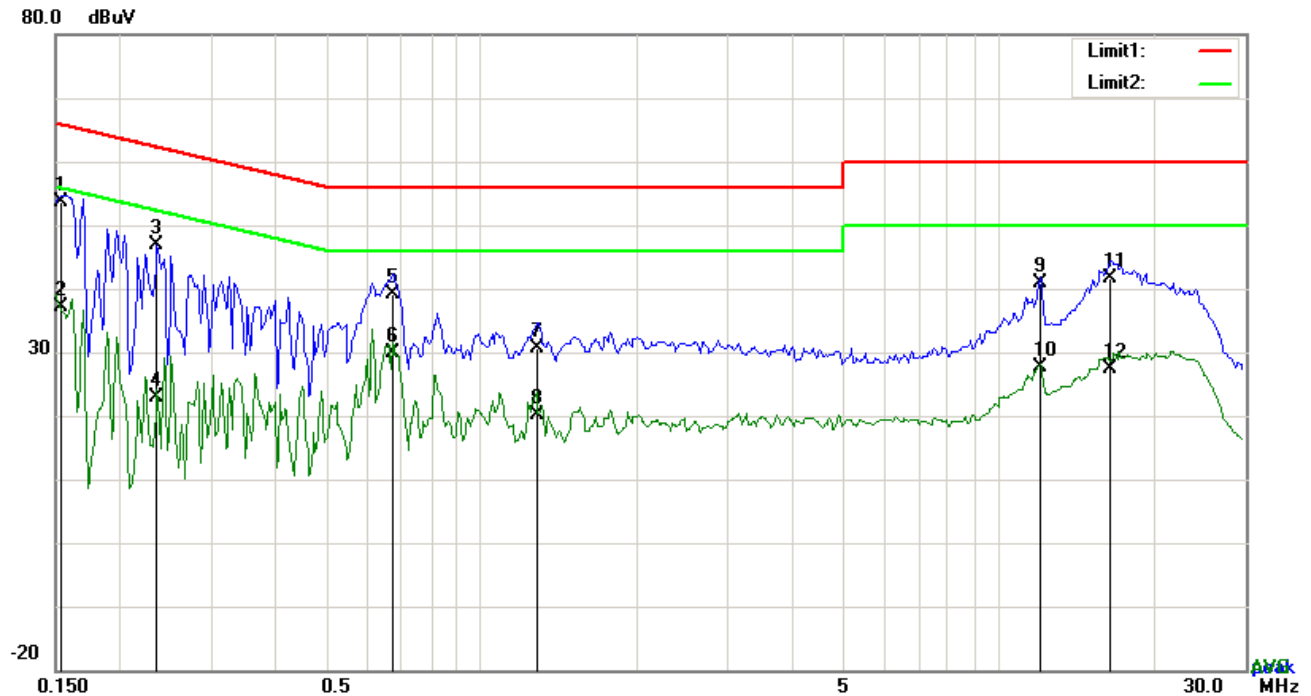
Procedure	<ol style="list-style-type: none"> <li>The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.</li> <li>The power supply for the EUT was fed through a 50Ω /50mH EUT LISN, connected to filtered mains.</li> </ol>
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	<p>3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.</p> <p>4. All other supporting equipment were powered separately from another main supply.</p> <p>5. The EUT was switched on and allowed to warm up to its normal operating condition.</p> <p>6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver.</p> <p>7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz.</p> <p>8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).</p>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

**Test Mode : USB Mode**

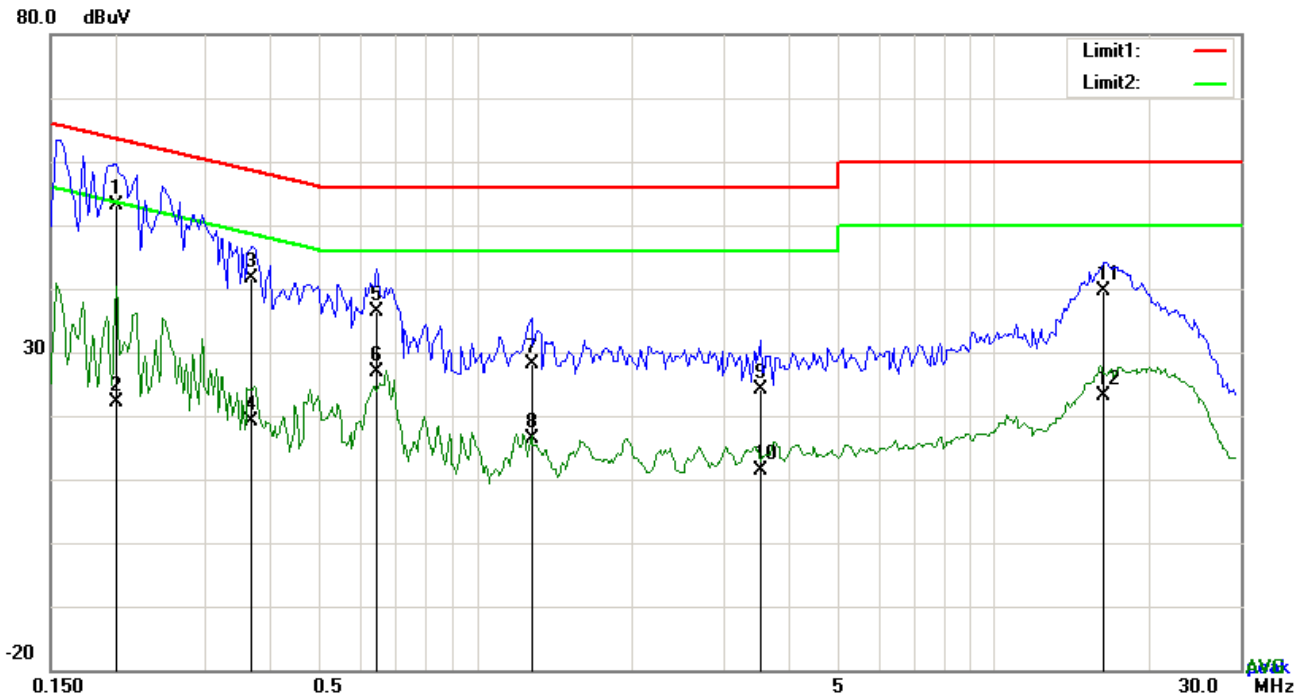


**Test Data**

**Phase Line Plot at 120Vac, 60Hz**

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	L1	0.1540	43.68	QP	10.03	53.71	65.78	-12.07
2	L1	0.1540	26.99	AVG	10.03	37.02	55.78	-18.76
3	L1	0.2358	36.76	QP	10.03	46.79	62.24	-15.45
4	L1	0.2358	12.79	AVG	10.03	22.82	52.24	-29.42
5	L1	0.6726	29.02	QP	10.03	39.05	56.00	-16.95
6	L1	0.6726	19.73	AVG	10.03	29.76	46.00	-16.24
7	L1	1.2888	20.57	QP	10.03	30.60	56.00	-25.40
8	L1	1.2888	10.03	AVG	10.03	20.06	46.00	-25.94
9	L1	12.0402	30.67	QP	10.18	40.85	60.00	-19.15
10	L1	12.0402	17.41	AVG	10.18	27.59	50.00	-22.41
11	L1	16.4550	31.50	QP	10.25	41.75	60.00	-18.25
12	L1	16.4550	17.01	AVG	10.25	27.26	50.00	-22.74

Test Mode:	USB Mode
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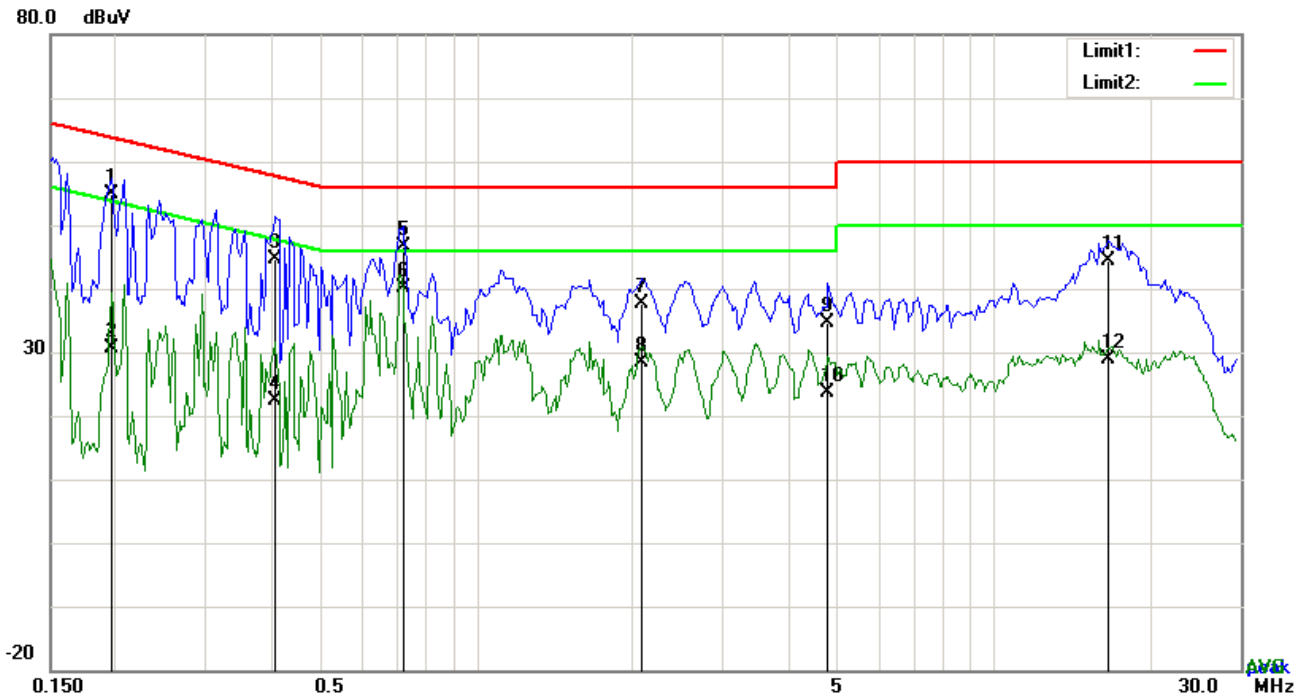


### Test Data

### Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB)	(dBuV)	(dBuV)	(dB)
1	N	0.2007	43.17	QP	10.02	53.19	63.58	-10.39
2	N	0.2007	12.14	AVG	10.02	22.16	53.58	-31.42
3	N	0.3684	31.67	QP	10.02	41.69	58.54	-16.85
4	N	0.3684	9.05	AVG	10.02	19.07	48.54	-29.47
5	N	0.6414	26.40	QP	10.02	36.42	56.00	-19.58
6	N	0.6414	16.91	AVG	10.02	26.93	46.00	-19.07
7	N	1.2771	18.21	QP	10.03	28.24	56.00	-27.76
8	N	1.2771	6.26	AVG	10.03	16.29	46.00	-29.71
9	N	3.5460	14.19	QP	10.06	24.25	56.00	-31.75
10	N	3.5460	1.29	AVG	10.06	11.35	46.00	-34.65
11	N	16.2600	29.36	QP	10.22	39.58	60.00	-20.42
12	N	16.2600	12.95	AVG	10.22	23.17	50.00	-26.83

Test Mode :	USB Mode
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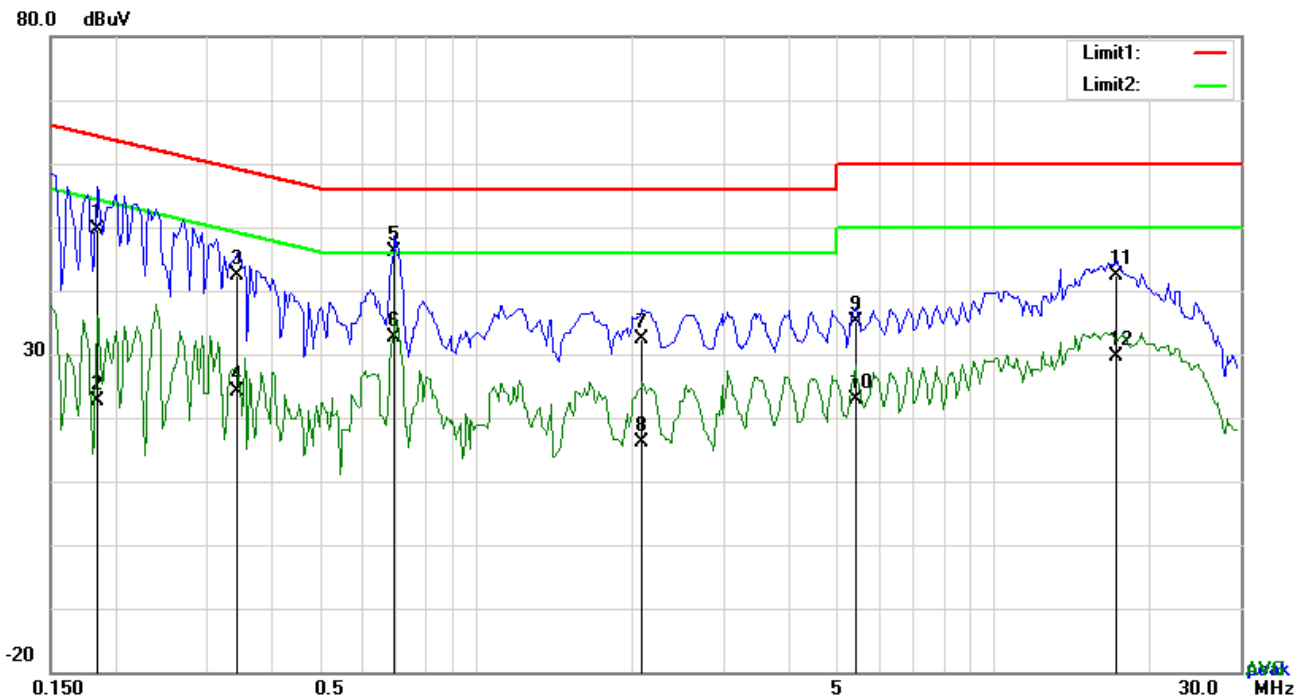


### Test Data

### Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.1968	44.85	QP	10.03	54.88	63.74	-8.86
2	L1	0.1968	20.53	AVG	10.03	30.56	53.74	-23.18
3	L1	0.4074	34.59	QP	10.03	44.62	57.70	-13.08
4	L1	0.4074	12.43	AVG	10.03	22.46	47.70	-25.24
5	L1	0.7233	36.64	QP	10.03	46.67	56.00	-9.33
6	L1	0.7233	30.05	AVG	10.03	40.08	46.00	-5.92
7	L1	2.0961	27.47	QP	10.04	37.51	56.00	-18.49
8	L1	2.0961	18.25	AVG	10.04	28.29	46.00	-17.71
9	L1	4.7862	24.50	QP	10.08	34.58	56.00	-21.42
10	L1	4.7862	13.60	AVG	10.08	23.68	46.00	-22.32
11	L1	16.6539	34.17	QP	10.25	44.42	60.00	-15.58
12	L1	16.6539	18.52	AVG	10.25	28.77	50.00	-21.23

Test Mode :	USB Mode
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### Test Data


### Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.1851	39.64	QP	10.02	49.66	64.25	-14.59
2	N	0.1851	12.51	AVG	10.02	22.53	54.25	-31.72
3	N	0.3450	32.38	QP	10.02	42.40	59.08	-16.68
4	N	0.3450	14.11	AVG	10.02	24.13	49.08	-24.95
5	N	0.6960	36.06	QP	10.02	46.08	56.00	-9.92
6	N	0.6960	22.53	AVG	10.02	32.55	46.00	-13.45
7	N	2.0961	22.41	QP	10.04	32.45	56.00	-23.55
8	N	2.0961	5.97	AVG	10.04	16.01	46.00	-29.99
9	N	5.3907	25.14	QP	10.08	35.22	60.00	-24.78
10	N	5.3907	12.70	AVG	10.08	22.78	50.00	-27.22
11	N	17.2194	32.03	QP	10.23	42.26	60.00	-17.74
12	N	17.2194	19.39	AVG	10.23	29.62	50.00	-20.38

## 6.2 Radiated Emissions

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1016mbar
Test date :	January 17, 2018
Tested By :	Evans He

### Requirement(s):

Spec	Item	Requirement	Applicable	
47CFR§15.109(d)	a)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges		
		Frequency range (MHz)		Field Strength (µV/m)
		30 – 88		100
		88 – 216		150
		216 - 960		200
		Above 960		500

Test Setup	
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Procedure	<ol style="list-style-type: none"> <li>The EUT was switched on and allowed to warm up to its normal operating condition.</li> <li>The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: <ol style="list-style-type: none"> <li>Vertical or horizontal polarization (whichever gave the higher emission level</li> </ol> </li> </ol>
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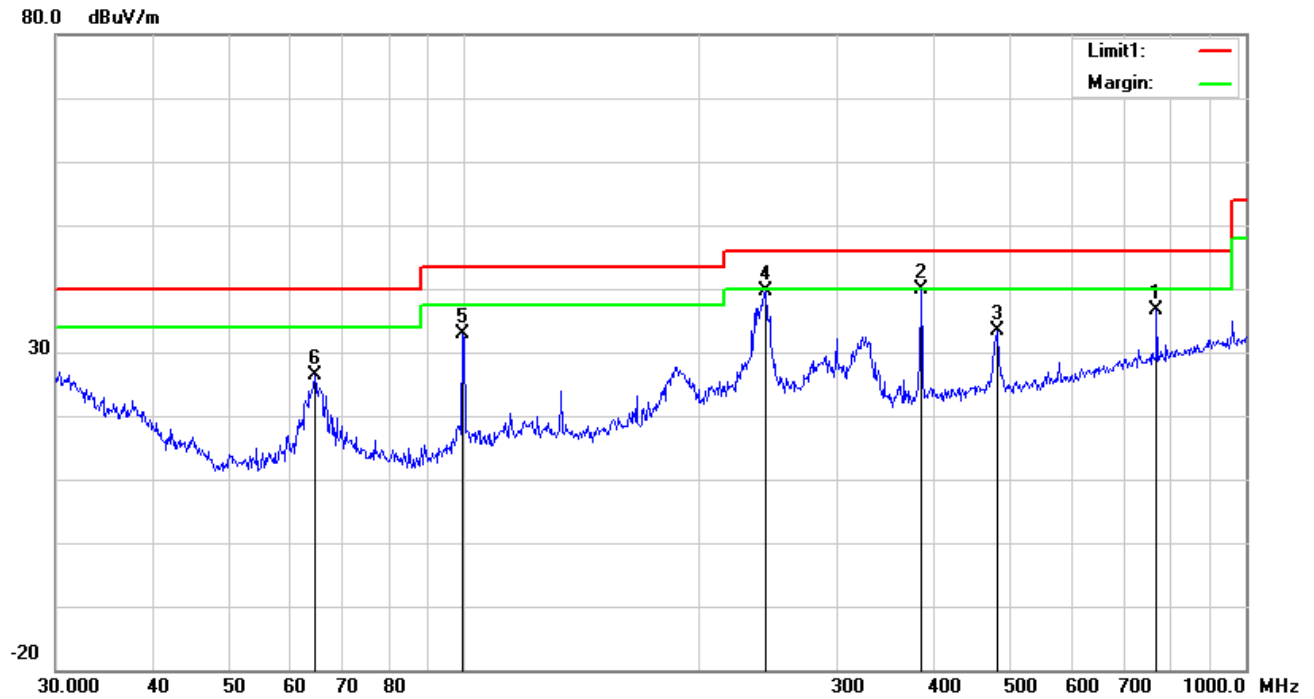
	<p>over a full rotation of the EUT) was chosen.</p> <p>b. The EUT was then rotated to the direction that gave the maximum emission.</p> <p>c. Finally, the antenna height was adjusted to the height that gave the maximum emission.</p> <p>3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz.</p> <p>4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth with Peak detection for Average Measurement as below at frequency above 1GHz. ■ 1 kHz (Duty cycle &lt; 98%) □ 10 Hz (Duty cycle &gt; 98%)</p> <p>5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test Mode : USB Mode

*Below 1GHz*

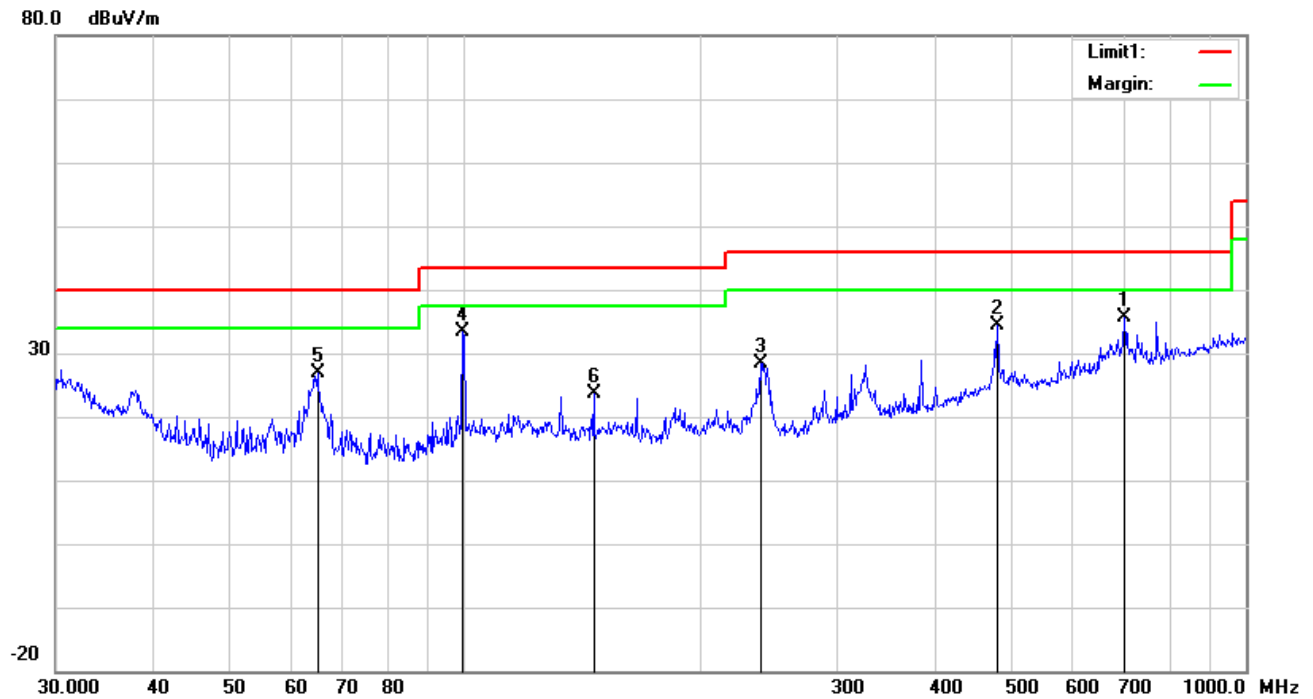


*Test Data*

**Horizontal Polarity Plot @3m**

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	H	768.7482	33.90	peak	21.02	21.22	2.90	36.60	46.00	-9.40	100	217
2	H	383.9318	44.50	peak	15.36	22.05	2.02	39.83	46.00	-6.17	200	295
3	H	480.5276	35.67	peak	17.31	21.85	2.31	33.44	46.00	-12.56	100	95
4	H	243.3772	48.82	peak	11.49	22.30	1.68	39.69	46.00	-6.31	100	62
5	H	99.5281	43.80	peak	10.29	22.32	1.11	32.88	43.50	-10.62	100	336
6	H	64.4331	40.41	peak	7.52	22.40	0.87	26.40	40.00	-13.60	100	22

## Below 1GHz



## Test Data

### Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(°)
1	V	699.3046	34.16	peak	20.19	21.36	2.54	35.53	46.00	-10.47	100	125
2	V	480.5276	36.72	peak	17.31	21.85	2.31	34.49	46.00	-11.51	100	212
3	V	239.1473	37.56	peak	11.55	22.31	1.67	28.47	46.00	-17.53	100	284
4	V	99.5281	44.22	peak	10.29	22.32	1.11	33.30	43.50	-10.20	100	352
5	V	64.8865	40.84	peak	7.54	22.40	0.88	26.86	40.00	-13.14	100	200
6	V	146.3735	32.07	peak	12.60	22.37	1.31	23.61	43.50	-19.89	100	326

### *Above 1GHz*

Frequency (MHz)	Read_level (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Level (dBμV/m)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1554.97	67.11	359	100	V	-18.35	48.76	74	-25.24	PK
2237.28	61.44	279	100	V	-14.86	46.58	74	-27.42	PK
3686.06	59.48	240	100	V	-12.15	47.33	74	-26.67	PK
1594.78	63.1	39	100	H	-17.83	45.27	74	-28.73	PK
2101.68	62.81	52	100	H	-14.62	48.19	74	-25.81	PK
3293.29	59.59	76	100	H	-13.27	46.32	74	-27.68	PK

*Note1: The highest frequency of the EUT is 2567.5 MHz, so the testing has been conformed to 5\*2567.5MHz=12,838MHz.*

*Note2: The frequency that above 3GHz is mainly from the environment noise.*

*Note3: The AV measurement performed, more than 20dB below limit so AV test data was not presented.*

*Note4: The radiated spurious test above 18GHz is subcontracted to SIEMIC (Nanjing-China) Laboratories. and found 30dB below the limit at least.*

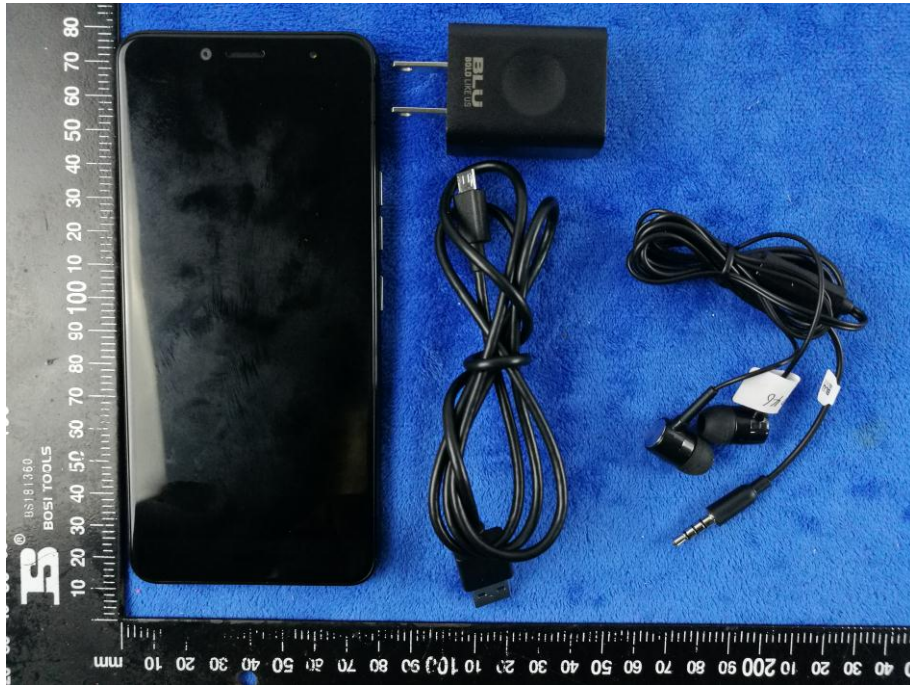
## Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
<b>AC Line Conducted Emissions</b>					
EMI test receiver	ESCS30	8471241027	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191106	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
Line Impedance Stabilization Network	LI-125A	191107	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
ISN	ISN T800	34373	09/23/2017	09/22/2018	<input checked="" type="checkbox"/>
Transient Limiter	LIT-153	531118	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
<b>Radiated Emissions</b>					
EMI test receiver	ESL6	100262	09/15/2017	09/14/2018	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/30/2017	08/29/2018	<input checked="" type="checkbox"/>
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/19/2017	09/18/2018	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna	AH-118	71259	09/22/2017	09/21/2018	<input checked="" type="checkbox"/>
Horn Antenna	BBHA9170	3145226D1	09/27/2017	09/26/2018	<input checked="" type="checkbox"/>

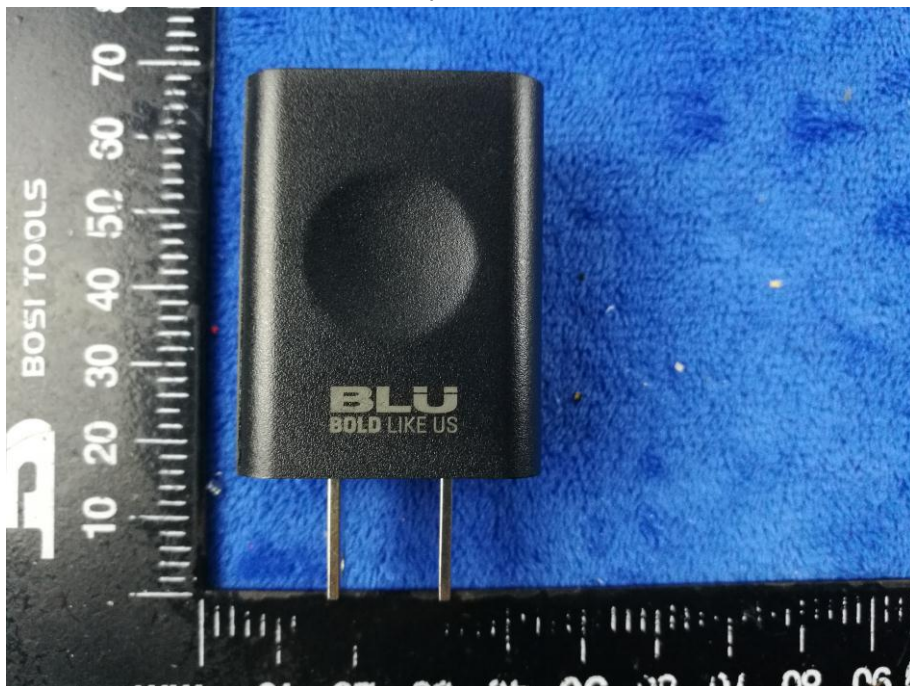
## Annex B. EUT And Test Setup Photographs

### Annex B.i. Photograph: EUT External Photo

Whole Package View

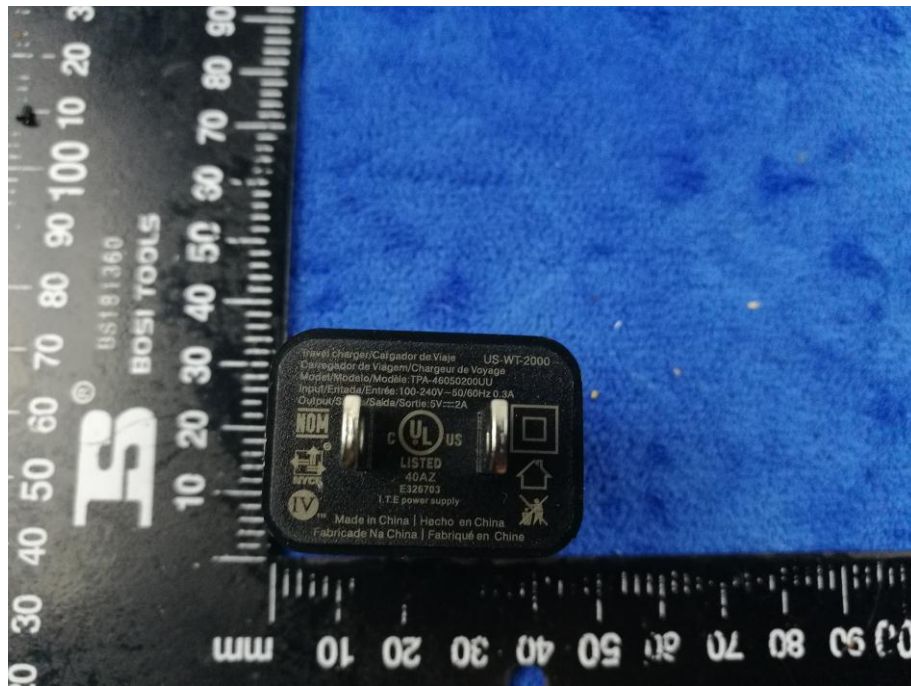


Adapter View





Label View



EUT - Front View



EUT - Rear View

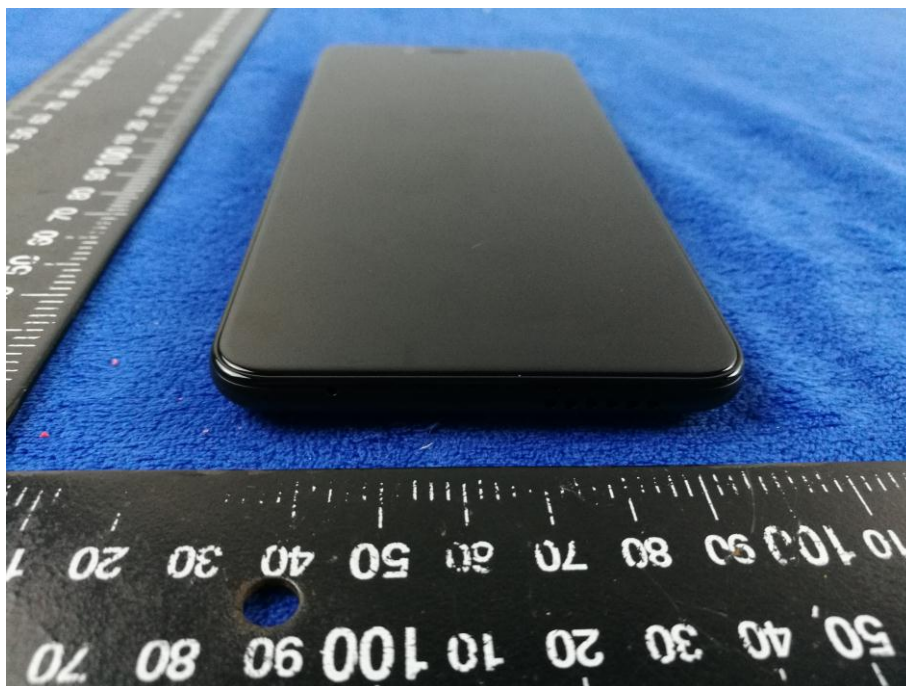


EUT - Top View

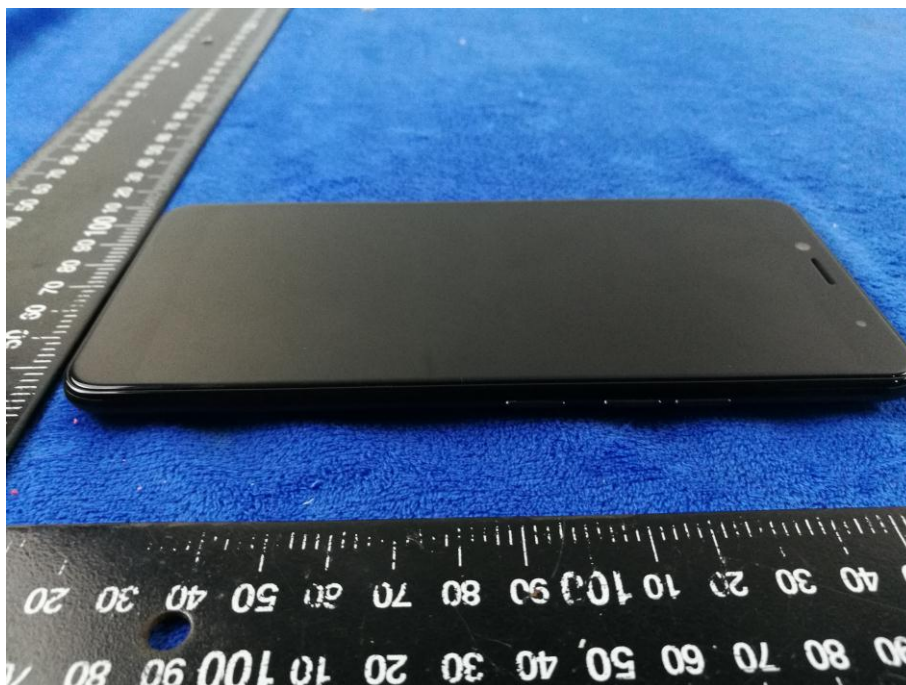




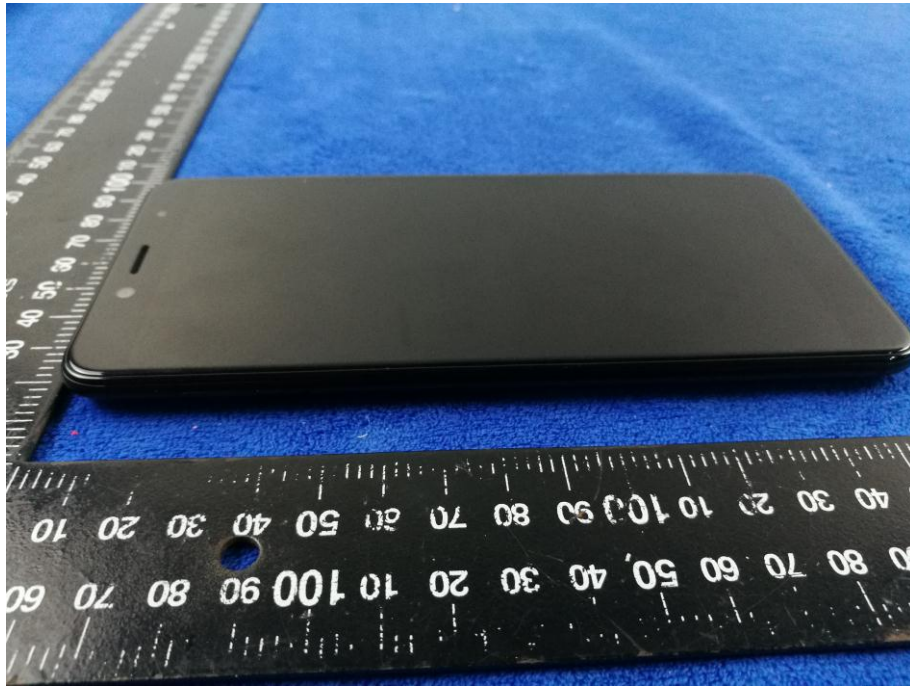
EUT - Bottom View



EUT - Left View



EUT - Right View



## Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1



Cover Off - Top View 2





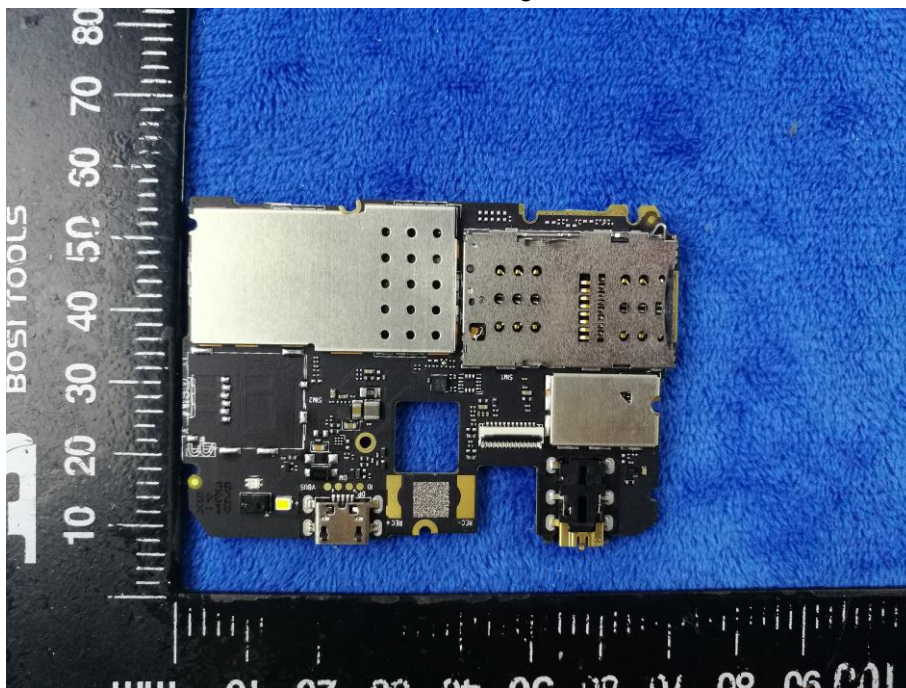
Battery - Front View



Battery - Rear View



Mainboard with Shielding - Front View

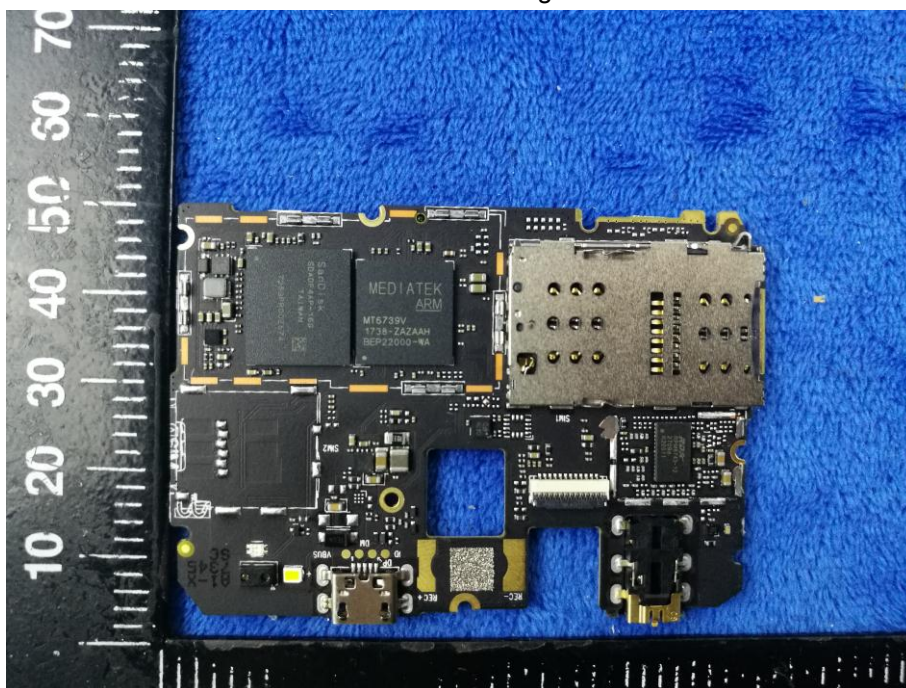


Mainboard with Shielding - Rear View





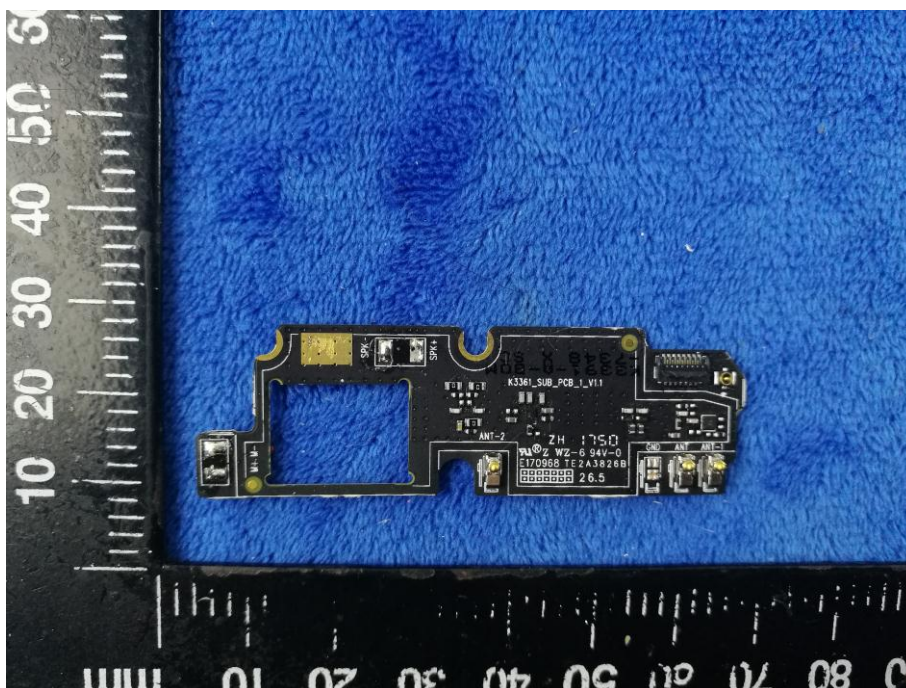
Mainboard without Shielding - Front View



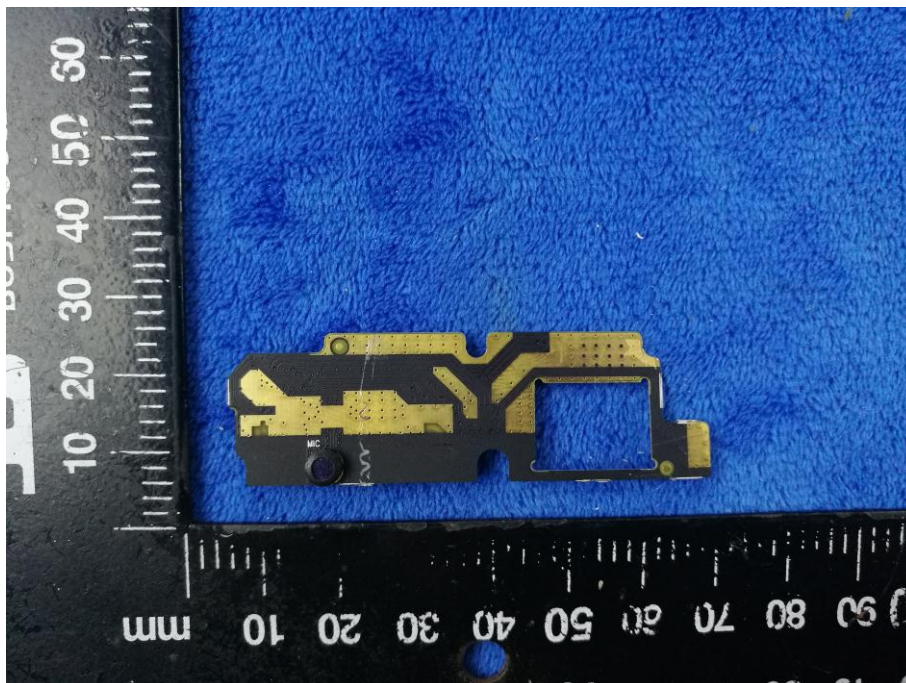
Mainboard without Shielding - Rear View



Smallboard – Front View



Smallboard – Rear View

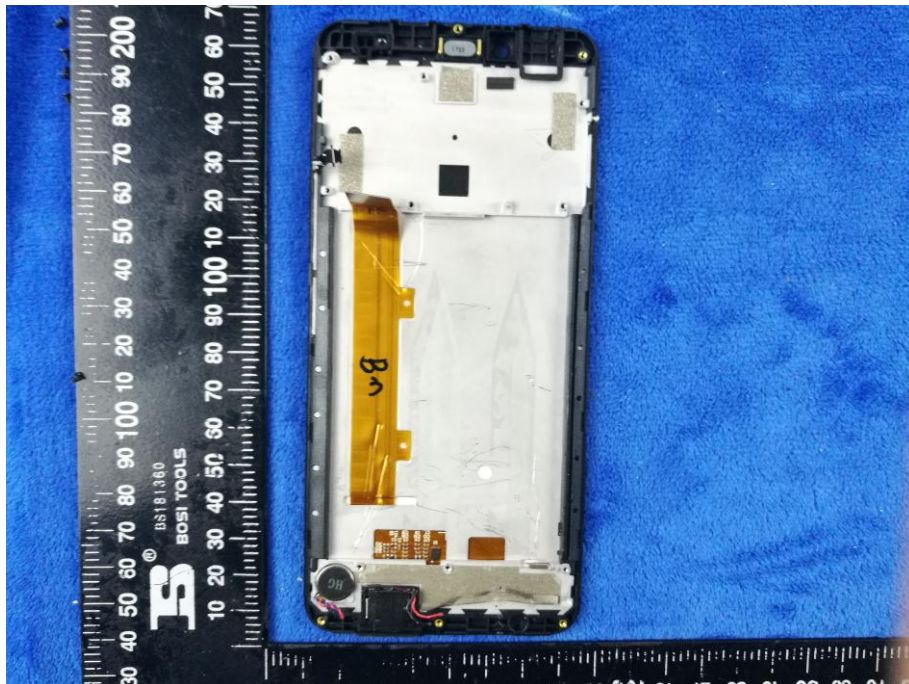




LCD – Front View



LCD – Rear View





GSM/PCS/UMTS-FDD/LTE Antenna View



WIFI/BT/BLE/GPS - Antenna View



RXD- Antenna View



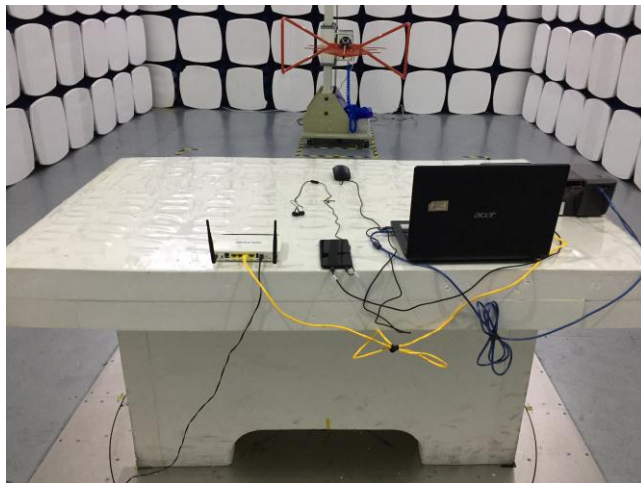
**Annex B.iii. Photograph: Test Setup Photo**



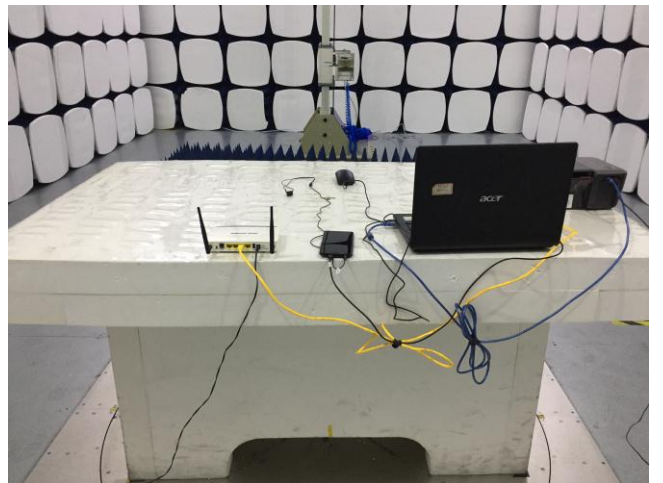
Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Emissions Test Setup Below 1GHz



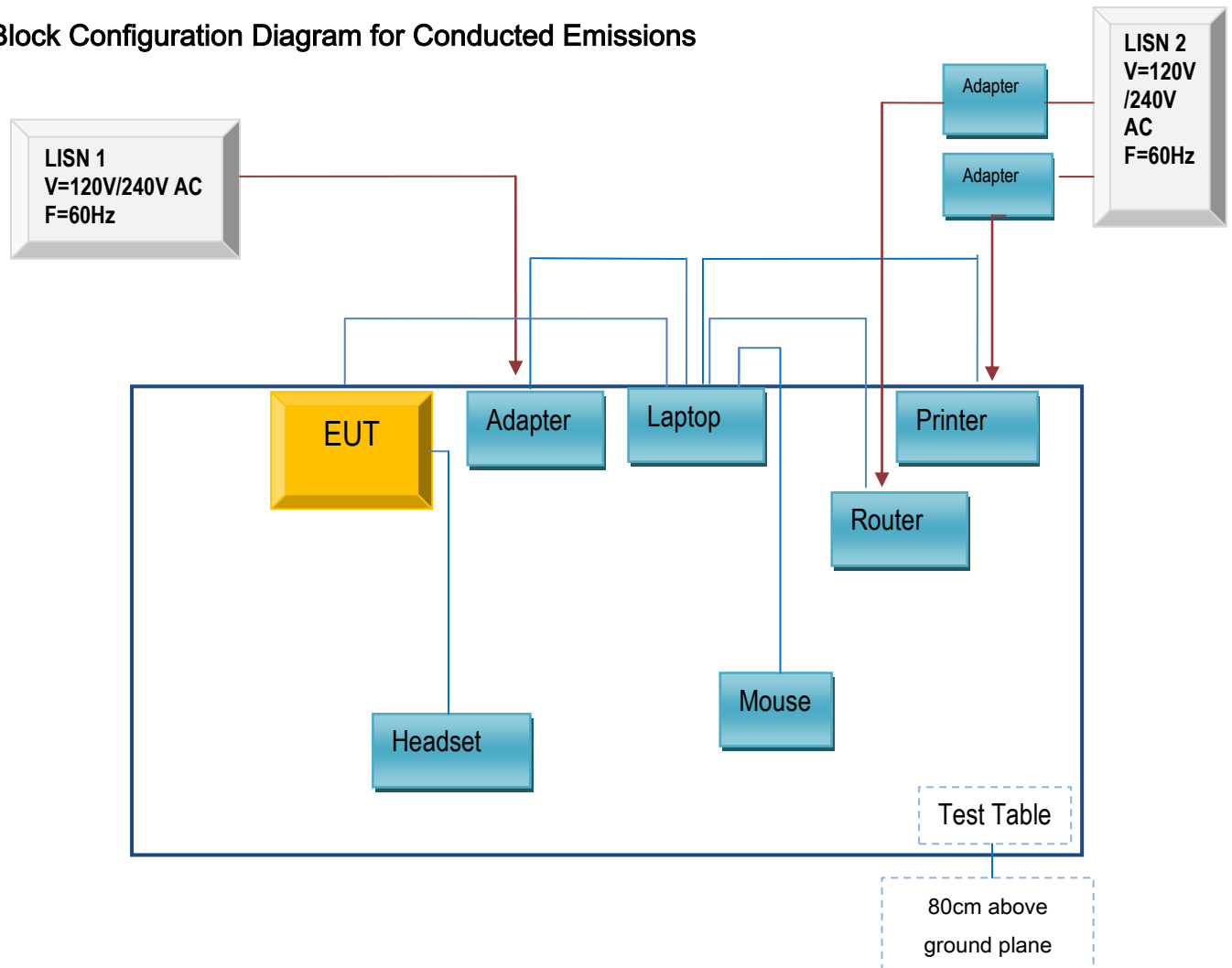
Radiated Emissions Test Setup Above 1GHz



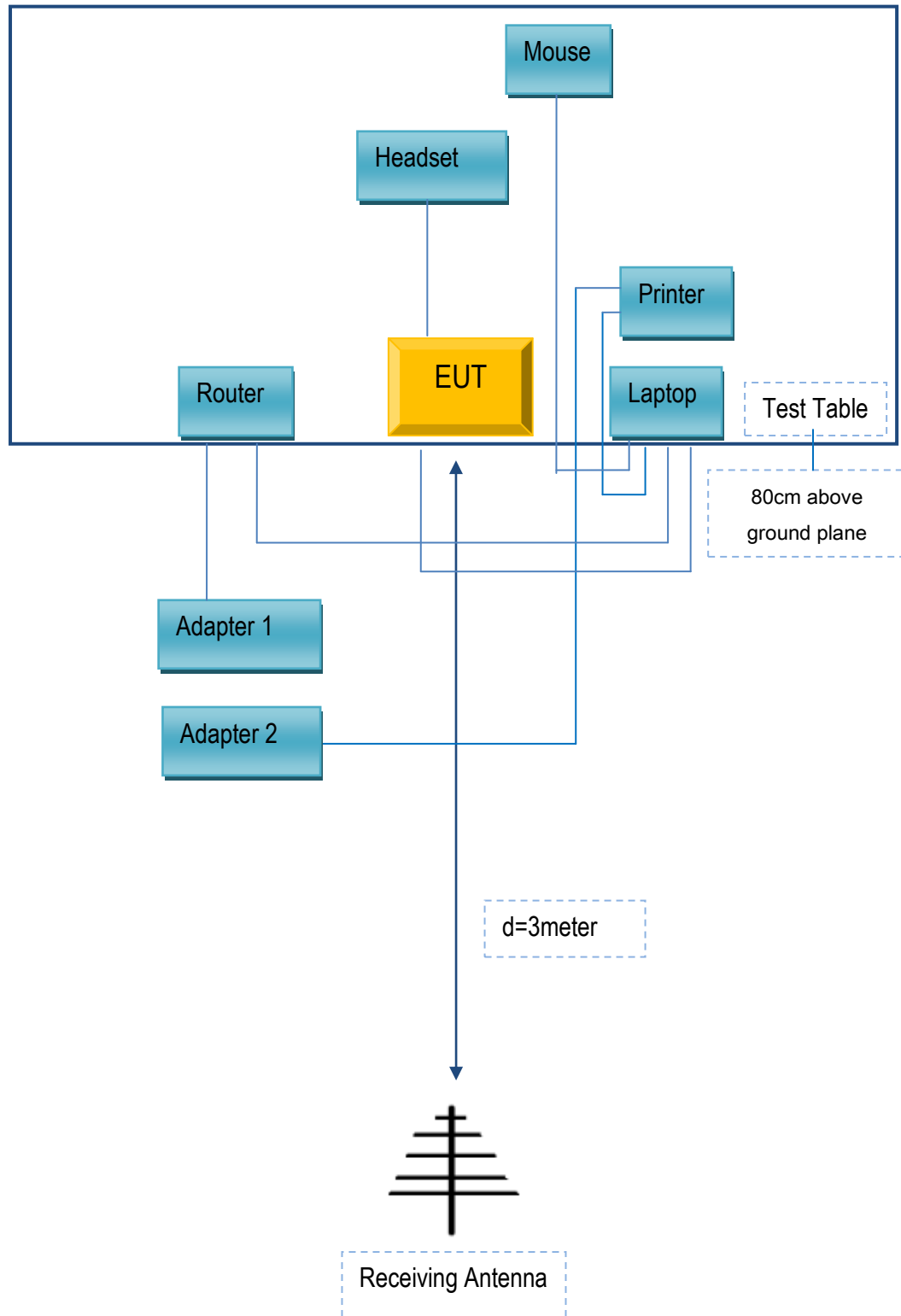
## Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

### Annex C.ii. TEST SET UP BLOCK

#### Block Configuration Diagram for Conducted Emissions



## Block Configuration Diagram for Radiated Emissions



## **Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION**

The following is a description of supporting equipment and details of cables used with the EUT.

### **Supporting Equipment:**

Manufacturer	Equipment Description	Model	Serial No
Lenovo	Laptop	E40	LR-1EHRX
GOLDWEB	Router	R102	1202032094
Lenovo	AC Adapter	42T4416	21D9JU
HP	Printer	VCVRA-1003	CN36M19JWX
DELL	Mouse	E100	912NMTUT41481
BULL	Socket	GN-403	GN201203
BLU Products, Inc	headset	VIVO ONE PLUS	N/A

### **Supporting Cable:**

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	2m	JX120051274
USB Cable	Un-shielding	No	2m	CBA3000AH0C1
RJ45 Cable	Un-shielding	No	2m	KX156327541
Router Power cable	Un-shielding	No	2m	13274630Z
Printer Power cable	Un-shielding	No	2m	127581031
Power Cable	Un-shielding	No	0.8m	GT211032

## Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see the attachment

## Annex E. DECLARATION OF SIMILARITY

N/A